

PROFILE OF COMPETENCES OF MANAGERS IN CUBA AND ITS APPLICATION IN AGRICULTURE

PERFIL DE COMPETENCIAS DE LOS DIRECTIVOS EN CUBA Y SU APLICACIÓN EN LA AGRICULTURA

Mercedes Delgado Fernández ^{I*}  <https://orcid.org/0000-0003-2556-1712>

Julia Muriel Escobar ^{II}  <https://orcid.org/0000-0003-4970-6912>

Jesús Camilo Polo Vázquez ^{III}  <https://orcid.org/0000-0002-4551-4369>

Danay Padilla Rodríguez ^{III}  <https://orcid.org/0000-0003-4900-6297>

^I Higher School of State and Government Cadres, Havana, Cuba

^{II} Ministry of Agriculture, Havana, Cuba

^{III} Livestock Business Group, Havana, Cuba

* Corresponding author: mercedes@esceg.cu

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Abstract

The article aims to propose a methodology for the design and evaluation of the competency profiles of managers in Cuba, considering the conceptual framework, good practices and current legislation. The methodology is supported in three stages and 14 steps. Some of the results of its application in the agriculture sector are presented in various types of organizations, both in the public administration and in the business system. The application and statistical analysis of the results of the tool for assessing the importance of generic competencies for the fulfillment of the mission and vision of the Grupo Empresarial Ganadero is also shown. The generalizability of this methodology is demonstrated by its implementation in a period of eight months in agriculture, through trainings developed with the cadres of the various types of existing entities, from the ministerial level to the productive base.

Keywords: competences, profile, managers, strategic, innovation, leadership

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Resumen

El artículo tiene como objetivo proponer una metodología para el diseño y evaluación de los perfiles de competencias de los directivos en Cuba, teniendo en cuenta el marco conceptual, las buenas prácticas y la legislación. La metodología se soporta en tres etapas y 14 pasos. Se presentan algunos de los resultados de su aplicación en el sector de la agricultura en diversos tipos de organizaciones, tanto de la administración pública como del sistema empresarial. También se muestra la aplicación y el análisis estadístico de los resultados de la herramienta de valoración de la importancia de las competencias genéricas para el cumplimiento de la misión y visión del Grupo Empresarial Ganadero. La capacidad de generalización de esta metodología está demostrada por su implementación en un período de ocho meses en la agricultura, a través de entrenamientos desarrollados con los cuadros de los diversos tipos de entidades existentes, desde el nivel ministerial hasta la base productiva.

Palabras clave: competencias, perfil, directivos, estratégico, innovación, liderazgo

Introduction

Organizations have shown great interest in using competencies as a management tool,¹⁻⁴ a term first defined in the 1970s by David McClelland. The competency model is recognized as an innovation^{6,7} that helps organizations to focus on that information related to the work and the skills of the personnel for its management^{5,8,9} and consists of knowledge, skills, abilities and other traits necessary for effective performance in a job.^{10,11,12}

Among the increasingly important skills for 21st century employees are critical thinking, creativity, communication, problem solving, collaboration, information, operations and management.¹³ The different proposals for competencies of leadership in environments of environmental, economic and social sustainability.¹⁴ Possible competencies that leaders must have for crisis management are also proposed, these being: building relationships of trust, identifying organizational gaps, assuming responsibility and acting with prudence, feeling and learn from the crisis, set priorities, properly assess risk and maintain good communication.¹⁵

In high-tech companies, leaders must be evaluated by criteria such as: delegation of rights and obligations, strategic thinking, ability to provide feedback in the face of complexity, responsibility for management, high level of professional skills, development of the organization's human capital and ability to work in accordance with the declared values.^{16,17} On the other hand, to increase the effectiveness of collaboration and create a favorable environment within the work team in digital transformation environments, the regular organization of workshops that use digital transformation tools is promoted. of design thinking.¹⁸

Competency-based performance management^{3,8,19-21} outlines criteria for performance at all levels of management, so that workers can understand what competencies are required for their advancement,^{11,12} allowing for alignment of goals organizational strategies to individual ones with the required dynamism. Hence, organization-based, individual, technical, and behavioral competencies are needed.^{21,22}

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In Industry 4.0²³ environments, managerial competencies are proposed with a holistic and strategic approach,²⁴ such as: organization of teamwork, ability to delegate, motivation, strategic thinking, planning, leadership, project and team management.²⁵ Adaptability to change, and resilience, interdisciplinarily for interaction and collaboration, interconnectivity, autonomy and complexity management through increased learning and experience, as well as emotional intelligence with motivation and the development of perspective, they are capacities to be developed in human resources in digital contexts.²⁷ In Cuba, these competencies related to organizational management consider the dimensions of collaboration, commitment, motivation, teamwork and emotional intelligence.²⁶

The article aims to establish the conceptual and methodological framework for the preparation of the competency profiles of managers in Cuba, taking into account the current regulatory setting on the work system with cadres and reserves and international trends. The methodological proposal is implemented in the agricultural sector at all levels of management and types of organizations, both in public administration and in the business system, showing some of the results obtained.

Methodology

The methodology used for the design and evaluation of the competencies entailed carrying out three stages and 14 steps that are shown in Figure 1. Each of the stages is explained below.

I. Contextualization, good practices and regulations

The contextualization includes the assessment of the meaning of competencies in organizations and in management, taking into account what has been published by the classics in this area of knowledge and a systematic review of articles reported in academic Google from the year 2017. As a result of Surveillance^{28,29}, the main trends in the design and evaluation of competencies for managers are identified.

In the same way, reference standards such as ISO 10015: 2019²¹ and current legislation related to competency profiles for cadres or managers in Cuba are analyzed. In relation to the experiences, good international practices are taken as a reference. In addition, the Cuban legislation is analyzed in relation to the competences of the cadres.

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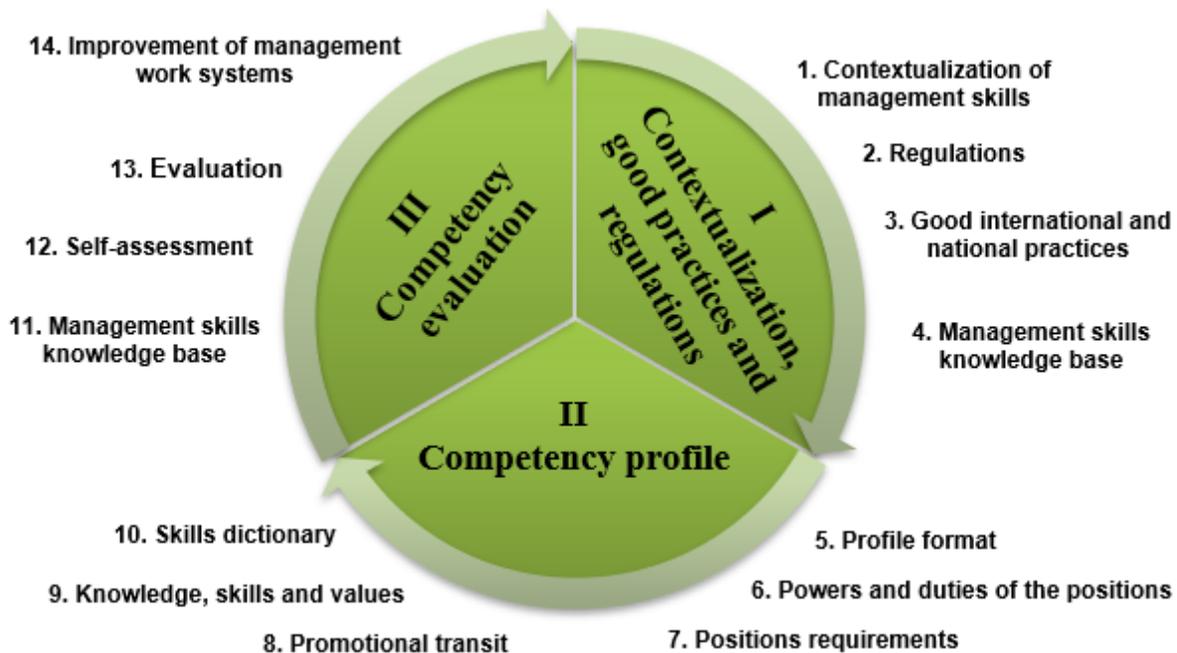


Figure 1. Methodology for the design and evaluation of the competencies of managers in Cuba
Source: self - made

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II. Competency profile

The design of the competency profiles takes into account the criteria and experience of the managers of the sector at all management levels, in addition to the results of the first stage. Issues such as the powers and obligations of the positions, the requirements of each position, promotional traffic and the identification of generic skills stand out.

The construction of the dictionary of competencies requires teamwork with the main managers of each organization, to later submit to the criteria of all the managers the assessment of which of the

competencies are the most important for the fulfillment of the strategic objectives aligned to the mission, vision, strategic objectives and individual needs.

III. Competency evaluation

The participation of all managers in the development of competencies is a key success factor with the responsibility of the cadre's body, and that is why, in the process of evaluating the competencies, they must first identify those required for each position.

It is proposed to carry out self-assessments and evaluation of the competencies of managers as a systematic process, which will allow the same managers to project improvement actions or others depending on the gaps. The skills profile is a reference pattern and managers should not be afraid, as they do not have all the skills at the highest level, which is almost impossible to happen.

Results and Discussion

I. Contextualization, regulations and experiences

The ISO 10015: 2019 standard defines competence as the ability to apply knowledge and skills to achieve the intended results at different levels, taking into account²¹:

- in the organization (external, internal and needs),
- the team (leadership, objectives, results, structure, responsibilities, team culture, cooperation, respect),
- and individual (roles, responsibilities, behaviors, emotional intelligence, concentration, aptitude for teamwork and others).

The holistic meaning of competencies includes not only knowledge and skills to do the job (knowing how to do), but also attitudes, values and personal traits linked to good performance in it (wanting to do it).^{8,18} This conception is very necessary in the competency profiles of managers, because as they are the ones who lead organizations, their attitudes and values are essential. Likewise, the factors of competencies can be subdivided into three main categories: leader, position and organizational, and among these, transformational leadership is vital.¹

Figure 2 shows the competency-based management model of ISO 10015:2019 (a), in which the Plan-Do-Check-Act cycle and that of the Cuban standard 3000:2007 are used for human resource management. (b). The latter places labor competencies at the center of human resource management, and they are defined as the synergistic set of knowledge, skills, experiences, feelings, attitudes, motivations, personal characteristics and values, based on demonstrated suitability, associated to superior employee and organizational performance. It means the work performance and superior performance of the worker, with high economic and social impact, present and future, identified with the labor skills required for their position. This performance corresponds to the strategic behaviors to achieve the entity's strategy.^{8,19,20}

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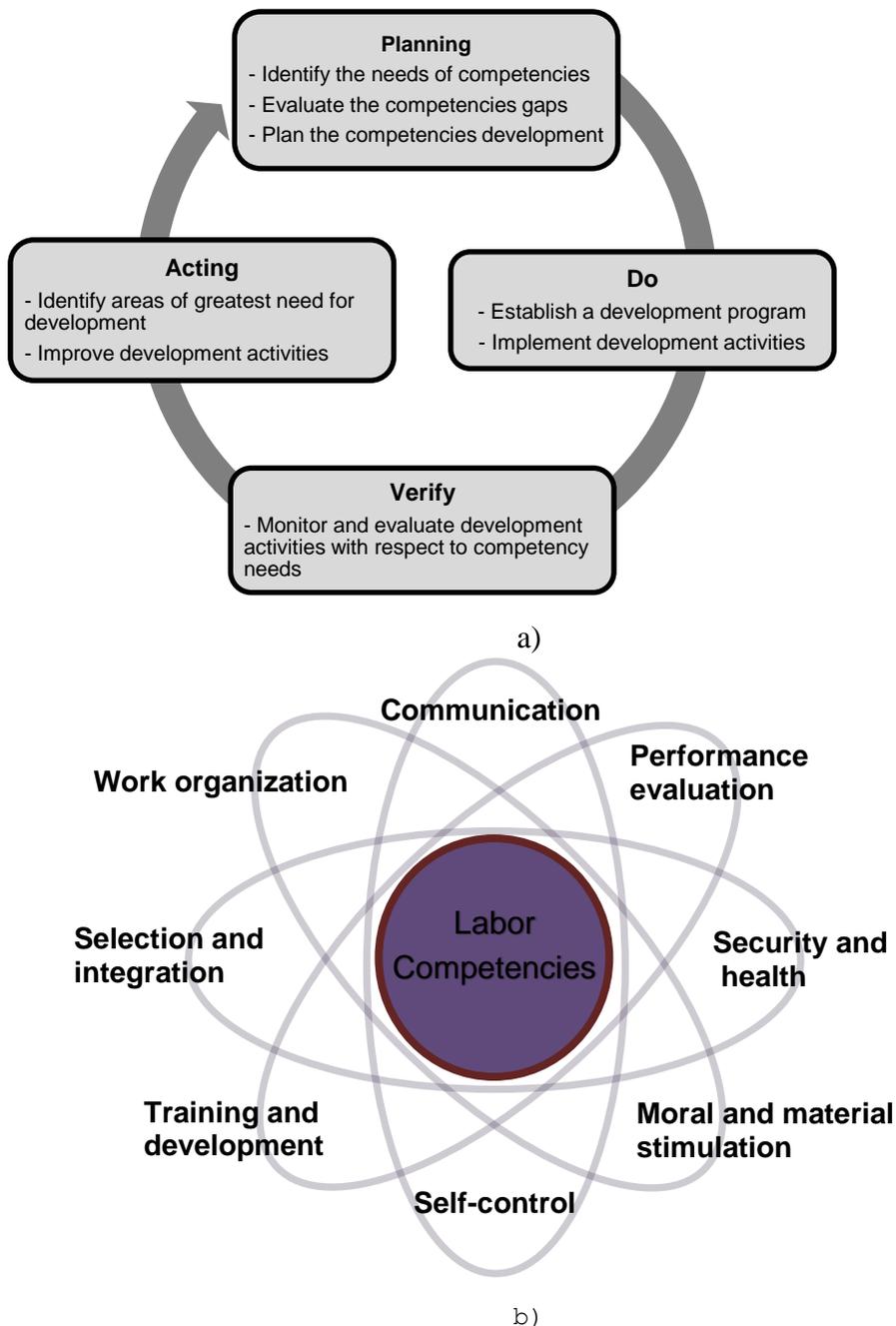


Figure 2. Management of competencies (a) and the human resources management system (b)
Sources: (a) ISO 10015: 2019²¹ and b) NC 3000: 2007¹⁹

This comparison allows two important conclusions to be drawn:

1. The continuous cycle of competency-based management includes not only its design, but also continuous evaluation and monitoring to identify the areas of greatest need for development, as well as improvement actions, which are once again planned.
2. The competencies constitute the core for carrying out the remaining human resource management processes and the work system with the cadres and reserves.

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Management is also recognized as involving the acquisition of effective managerial competence in the following key areas:³⁰

- The resolution of problems in organizations to achieve the goals and objectives in environments of systematic change, such as the current ones, must be accompanied by the identification, analysis and implementation of solutions to management problems.
- Administration includes planning and implies following established procedures (although they should not be seen as ends in themselves) for execution, control, communication, delegation and crisis management.
- Human resources management must be based on the strategic integration of human resources, the evaluation of workers and the exchange of ideas between shareholders and workers.
- Organizational leadership must be developed through interpersonal relationships, teamwork, self-motivation to perform, emotional strength and maturity to handle situations, as well as personal integrity and general management skills.

Among the most important skills of public administration officials are: flexibility, creativity and proactive behavior, analytical skills and political sensitivity, in addition to digital skills.³¹ In relation to the skills of entrepreneurs, learning from experiences is mentioned. In the achievement of business results, such as monthly or annual sales, cash flow, accounts receivable, quality and timeliness, in a causal connection with the initiation and success of the company.³² In turn, competencies in contract management³³ and relational capacities for achieving organizational performance stand out.^{34,35}

The training of professional managers in Russia is based on the professional learning of innovative business competence that includes economically significant personal qualities (initiative, mobility, enterprise, independence in rational decision-making and receptivity to innovations); they reflect the willingness and ability to carry out professional activities in different spheres of the economy, with the ability to assimilate new knowledge and make effective decisions with perspective in situations of risk and uncertainty.³⁰

Leadership competence can be expressed by the combination of intellectual, managerial and emotional competence; Depending on the type of organization, project, task and context, some skills are more relevant than others.³⁶ Among the leadership skills are self-improvement, learning and improvement, in addition to having a good attitude, promoting their best values, be disciplined and develop staff.³⁷

Management competencies are associated with development opportunities (such as assessment strategies, development approaches, organizational commitment, and managerial performance)^{2,5,38} including performance management.^{3,8,11,12} Management competencies are also assessed. market, technological and integrative at the organizational level.^{7,39,41} On the other hand, the optimization of human capital management considers tangible and intangible indicators through the different key processes such as planning and its strategic management control through the Table Comprehensive Command.^{20,42,43}

Table 1 shows some characteristics of the skills model of the People's Republic of China based on the experiences of managers.⁴⁴

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Table 1. China Competencies Model

Generics	Ability to: observation, comprehensive, understanding, response, creative, oral presentation, communication, learning, problem solving, decision making, organization, personnel management, coordination, operation, information collection, quick thinking, logical reasoning, mathematics, consult, public service, psychological adjustment, reactive, perspective, detail focus, guide, designate, diversity, drive, emotional, empowerment, feedback, listening, perceptual, writing, research, quality orientation, results orientation, strategy making, time management and teamwork	<ul style="list-style-type: none"> • 41 skills • Concept of each competence • Performance modes of low and high levels of each competition
Counties	Central Elements	Psychological Qualities
	Innovation, learning, according to management, decision-making, organization, adequate appointment of human resources, communication and coordination, research, motivation, ability to grasp policy, integration of information, psychological adjustment, ability to work in the economy, general planning capacity, crisis management and results-oriented	Dedication, self-discipline, vision of the future, initiative, perseverance, tolerance, self-confidence, responsibility, decisiveness, independence, reasonableness, pragmatism, flexibility, motivation to achieve, awareness of the general situation, initiative, dedication and group enjoyment, integrity, honesty, sense of humor, hard working

Figure 3. Characterization of the frame group, completion and formation

Source:⁴⁴

In Cuba, the aspects related to the competences for the cadres are included in the following normative documents and guidelines:

- Decree Law 13/2020 “Work System with State and Government Staff and their Reserves”.⁴⁵
- Presidential Decree 208/2021 “Regulation of the Work System with State and Government Staff and their Reserves”.⁴⁶
- Ideas Concepts and Guidelines. VIII Congress of the PCC.⁴⁷
- Guideline 196 of the Economic and Social Policy approved at the VIII Congress of the PCC.⁴⁸

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Decree Law 13/2020 "Work System with State and Government Staff and its Reserves" in relation to the powers of the staff establishes:⁴⁶

- Article 16. The selection of cadres is based on the principles: a) Proceed from the base and that their promotions have been produced gradually, in correspondence with the results of the work and the competency profile.
- Article 38. The heads of the bodies, national entities and local bodies of People's Power, establish the preparation requirements for the main positions of the different levels of management, based on the functions, powers and obligations, which are included in the skills profile and will be taken into account for the projection, selection, evaluation and promotion of the cadres.
- Article 44. The preparation and improvement of the cadres and their reserves, prior to the performance of the position, are guaranteed through actions that, in addition to their comprehensive preparation, must be aimed at obtaining knowledge, as well as regulations, procedures, powers, functions, obligations and skills, and the development of skills, all linked to the position to be held.

The competency profile is the document that describes the set of knowledge, skills and values required to perform a position, expresses the capabilities and characteristics that the staff must possess and develop to fulfill their functions, powers, and obligations, in correspondence with the requirements technical, productive and service activities of the activity in which it operates, and does not necessarily include or describe all of them.⁴⁶

The cadres in Cuba must stand out for their dedication to the task, their desire to excel, their modesty and enough sensitivity to put themselves in the place of others, putting us before me; they have a responsibility to dialogue sincerely, from the heart, and to be agile in incorporating these perceptions into decision-making.⁴⁷ An important conclusion of the contextualization was the decision to include knowledge, skills and values in the competencies for managers.

II. Skills Profile

With the objective of increasing food production and satisfying the unmet demands for agricultural products, the Cuban Government recently carried out, with the participation of producers, experts and managers of the sector, 63 measures for the agricultural sector with more than 650 actions, according to 7 working groups.⁴⁹ The groups are organized as follows: 1. Structure, 2. Financing, investment and foreign investment, 3. Productive programs, 4. Agricultural cooperative, 5. Staff, completion and training, 6. Science and innovation, computerization and 7. Agricultural communities.

In the group related to the cadres, completion and training, 4 measures and 31 actions are included, showing in **Figure 3** a general characterization and the main indicators that are evaluated by this group.

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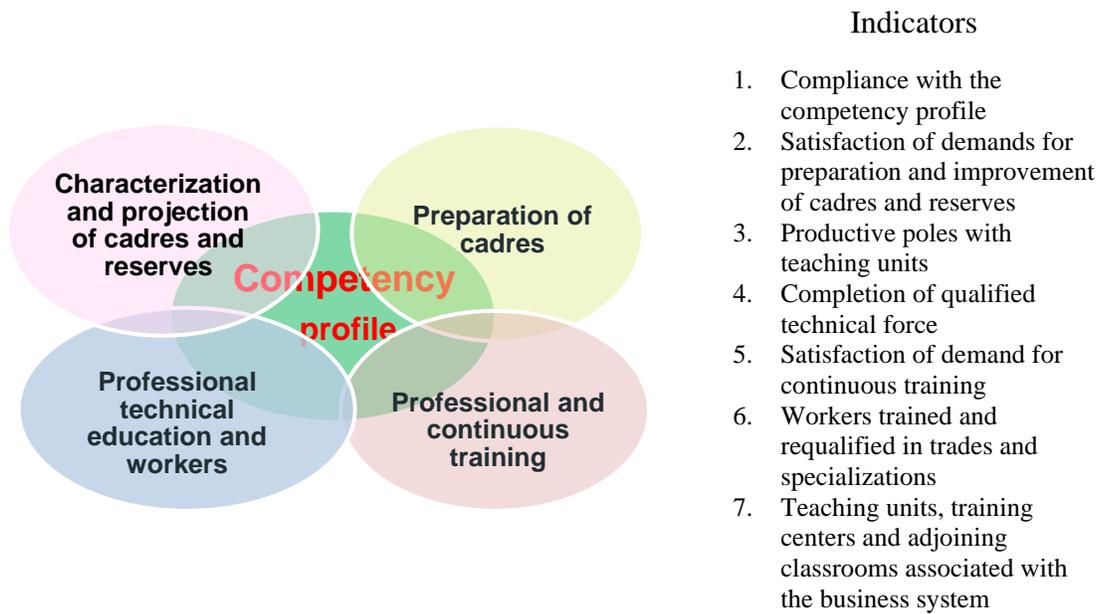


Figure 3. Characterization of the cadre group, completion and formation
Source: self-made

One of its measures is 52, referring to the design of a staff training system that allows the creation of the skills and abilities required for the performance of their functions at the different levels of management. The main actions of this measure are related to:

- Sector skills profiles.
- Characterization of the cadres.
- Diagnosis of training needs.
- System for overcoming cadres and reserves up to the productive base.
- Information system for cadres, reserve and quarry.
- Youth universe to hold management positions and the rotation of young cadres to positions with greater responsibility.

It should be noted that the agricultural sector is the one with the largest number of cadres in the country with more than 8,000 cadres in management positions up to the productive base and municipal delegations. In order to undertake the design of the competency profiles, the Higher School of State and Government Staff (ESCEG) initially developed a training session with the heads of staff from the different management levels: Agency, Business Groups, Affiliated Institutions, Provincial and Municipal Delegations. **Figure 4** shows the entities participating in the training.

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¡Error! No se encuentra el origen de la referencia. Agricultural institutions that prepare competency profiles

Source: self-made

The competency profile file of the cadres took into account the Presidential Decree of the Work System with the cadres and the organizational culture of each institution. The aspects that cannot be missing are:

- A. Position identification. Title of the position, category of staff, organizational unit or area of work.
- B. Functions, attributions and obligations of the position (it may be that in some organizations rights and duties of the position are defined and others include the mission of the organizational unit)
- C. Requirements or demands of the position. Level of schooling, academic training, related specialty(s), promotional transit and minimum management experience in years (the ideal age range can be added).
- D. Competencies. Knowledge, skills (generic and specific) and values.
- E. Data of the tables that participate in the profile. Position, name and surnames, signature and date of the position profile table, of the one who reviews it and of the one who approves it.

Some recommendations were made in the training of the chiefs of cadres, such as:

To identify the skills of the position (generic and specific), the mission, vision and strategic objectives must be taken into account. It is always convenient to first develop the skills common to all cadres and for them the strategic projection can help their identification. They can take into account the processes and the responsibilities of each cadre in them. Process analysis can help identify the specific skills required for each cadre, based on their responsibilities.

- In relation to knowledge, they must include that required for the activities performed as a cadre, the legislation and the information and communication technologies that must be mastered. These three aspects can be attached to the profile in the required knowledge, since they can be systematically updated.
- They should not be lacking leadership skills, effective decision-making when facing adverse situations or opportunities, teamwork and being a constant cadre's trainer.
- The three pillars of government management must be reflected in the competencies (science and innovation, social communication and computerization of processes).⁵⁰

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- The proposed values of the organization can be based on the shared values of the organization, the code of ethics of the cadres⁵¹ and the ideas, concepts and guidelines of the Communist Party of Cuba.⁴⁷
- It was agreed to first develop the competency profiles of the maximum head of the institution and that of the cadre chief.
- Additionally, it was requested that the list of learning needs and good practices of the institution be included as annexes in each profile. This information allows diagnosing the preparation needs of the cadres and projecting training in relation to the good practices identified according to the needs.

As an example, Figure 5 shows the promotional transit of the president position of the, which constitutes a reference pattern to follow.

GECAN PRESIDENT											
Preparation	Trainee	Courses			Diploma		Specialty/Master			PhD	
Age (years)	23-26	26-33	33-36	36-39	39-41	39-41	41-44	41-44	44-45	44-45	45-50
Experience years		6	6	6	8	8	10	10	12	12	14
Positions	Primarios				Level 4		Level 3		Level 2		Level 1
Enterprise System	Trainee	Specialist, Senior specialist	UEB Head	Head of department	Functional Director; Deputy director; Enterprise General director			Functional Director, Vice president, First Vice president			President

Figura 5. Promotional transit of the President of GECAN
Source: self-made

In the training developed with the heads of agriculture cadres, generic skills were analyzed, taking into account the literature review, experience and needs, as well as the specificities of each institution, whether public administration or business system or other characteristics. On the other hand, several research tools were developed to be applied to the cadres, such as:

1. Level of importance of the competence for the fulfillment of the mission and vision.
2. Level of importance of the competence for performance in each position.
3. Impact matrix of competencies in the strategic objectives of the organization.
4. Impact matrix of the competences of the cadres in the directions and/or processes.

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These tools were applied in the second training that was carried out with all the cadres of each organization. As an example, the box diagram in **Figure 6** shows the evaluations of a sample of 27 cadres (includes the main management positions) of the Livestock Business Group in relation to the level of importance of generic skills for compliance with the mission and vision. It is ordered, assigning the value 1 to the most important.

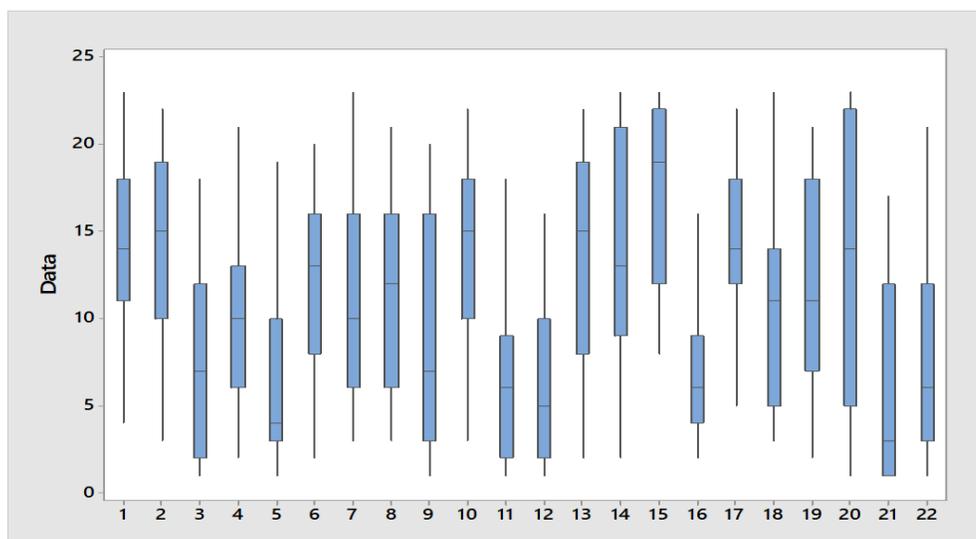


Figure 1. Box plot of the importance of competencies according to GECAN's vision and mission
Source: processing with Minitab statistical software

The best valued generic competencies, whose boxes are closest to value 1, are shown in **Table 2**, with their respective values of median, third quartile (Q3), mean and standard deviation.

Table 2. Generic competences of more importance in the GECAN

No.	Competency	Medium	Q3	Media	Standard Deviation
16	Teamwork	6,00	9,00	6,63	3,54
11	Leadership and command	6,00	9,00	7,00	5,00
12	Planification and organization	5,00	10,00	6,22	4,92
5	Orientation to the fulfillment of objectives and results	4,00	10,00	6,30	5,33
21	Knowledge of the activity to be carried out	3,00	12,00	6,04	5,73
22	Knowledge of current legislation and regulations	6,00	12,00	7,81	5,26
3	Prospective and strategic management approach	7,00	12,00	7,11	5,96
4	Adaptability to change and proactivity	10,00	13,00	9,89	5,38

Source: self-made

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In relation to the analysis of the box diagram, it was interesting to know that the most variable generic competence, where there was less consensus, was 20 (staff builder and ability to transmit knowledge) and the one with the worst evaluation was 15 (productive meetings). The following competencies were not valued among the most important: 9 (innovation and creativity), 8 (effective communication), 1 (knowledge and technology management), 2 (information and communication technologies), 14 (resource management) and 19 (ability to control). These perceptions of the cadres could suggest carrying out training for the management team in these skills, and at the same time deepen the preparation in the best valued ones, which are essential for the exercise of management in this business group, according to the perceptions of the majority of cadres.

Another statistical technique used was the classification of the variables or competencies, which is represented in the dendrogram of *¡Error! No se encuentra el origen de la referencia.*, with six clusters.

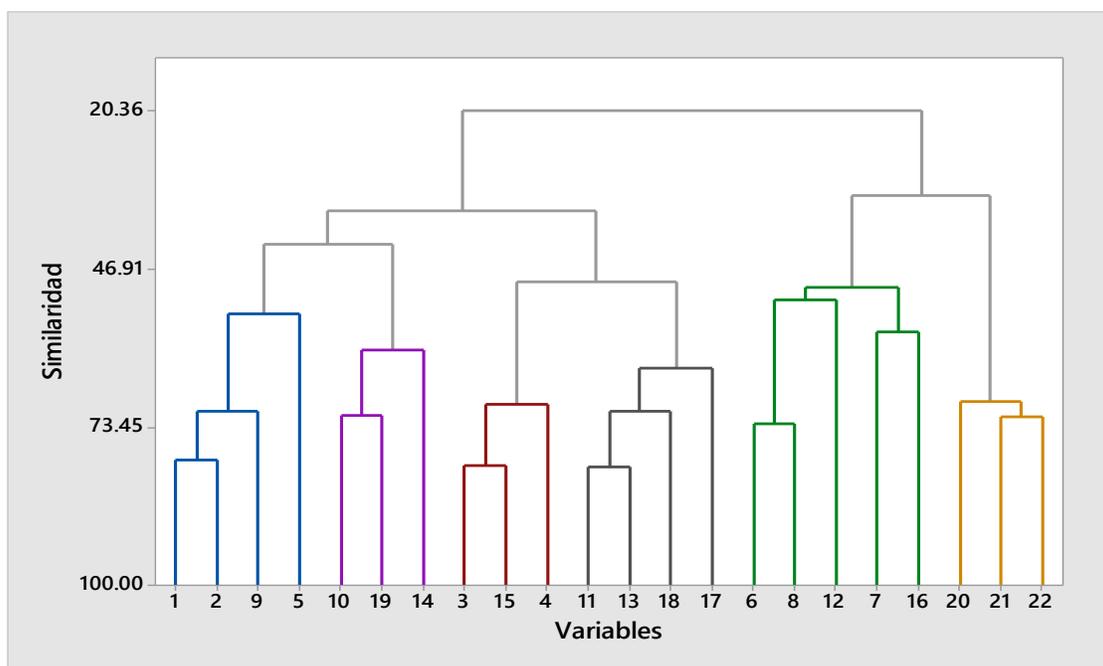


Figure 7. Dendrogram of the generic competences of the GECAN
Source: Minitab statistical software processing

Table 3 allows knowing the relationships between the competencies, which helps their evaluation, as well as to develop the training for the cadres by the associated competency groups. Group 2 was the only one in which none of the prioritized competencies were identified according to the perceptions of the cadres. On the other hand, one of the first trainings already identified for the preparation of cadres refers to the analysis and interpretation of financial statements, which will contribute to raising the perception of competencies 14, 18, 19.

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Table 3. Characterization of the clusters of the generic competences of the GECAN cadres

<p style="text-align: center;">Group 1 (1, 2, 9 and 5)</p> <p>1. Knowledge and technology management 2. Information and communication technologies 9. Innovation and creativity 5. Orientation towards meeting objectives and results</p>	<p style="text-align: center;">Group 4 (11, 13, 18 y 17)</p> <p>11. Leadership and command 13. Time Management 18. Decision Making 17. Problem Solving and Conflict Management</p>
<p style="text-align: center;">Group 2 (10, 19 and 14)</p> <p>10. Learning and assimilation of good practices 19. Capacity for control 14. Management and resource management</p>	<p style="text-align: center;">Grupo 5 (6, 8, 12, 7 y 16)</p> <p>6. Logical reasoning 8. Communication 12. Planning and organization 7. Capacity for analysis and synthesis 16. Teamwork</p>
<p style="text-align: center;">Group 3 (3, 15 y 4)</p> <p>3. Prospective and strategic management approach 15. Productive meetings 4. Adaptability to change and proactivity</p>	<p style="text-align: center;">Group 6 (20, 21 y 22)</p> <p>20. Staff trainer and ability to transmit knowledge 21. Knowledge of the activity to be carried out 22. Knowledge of current legislation and regulations</p>

Source: self-made

Another statistical technique applied was the correlation between the competencies, with those shown in **Table 4** remaining significant. It can be seen that competency 15 (productive meetings) is the one with the most correlations, with another 8 competencies.

Table 4. Significant correlations between the skills of the GECAN cadres

	1	3	4	6	7	8	9	10	11	13	20	21
2	X											
4		X										
8				X								
9	X											
10	X				X							
13									X			
15	X	X	X	X		X	X		X	X		
17										X		
18									X	X		
19								X				
21		X									X	
22											X	X

Source: statistical processing with Minitab software

The compilation of the dictionary of competencies was carried out by the team leader and teamwork with the main directors of each organization. This dictionary is a guide for the design and evaluation of cadre

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skills and can be updated. It includes for each one of the competences its meaning and possible performances.

For example, the GECAN dictionary has the meaning and performance of the 22 generic competencies shown in Table 3, in addition to the ethical values: patriotism, honesty, industriousness, dignity, humanism, solidarity, honesty, and justice. The dictionary of competencies of the Ministry of Agriculture was also established. Thus, leadership competence for this management level is defined as the ability to develop, consolidate and lead subordinates and work teams, encouraging their members to work autonomously and responsibly to meet objectives, goals and face challenges. Challenges. Its possible performances are:

- Summons and mobilizes a group around a shared vision of collective problems and the need to change to solve them.
- Identifies the needs and expectations of a group or community.
- Identifies the opportunities and threats of the environment with different perspectives (social, cultural, economic, technological, legal, environmental, among others)
- Recognizes, with the participation of the group, common problems and objectives.
- Identifies the cultural and mentality changes required.
- Helps team members to contribute to the solution of collective problems.
- Plans and organizes actions together with others, to solve collective problems.
- Evaluates the impact of actions on change and proposes measures for continuous improvement.
- Generates in all areas and activities an atmosphere of enthusiasm, illusion and commitment of people towards the organization.
- Often identifies "what good leadership is" according to the feelings and sensations of others and tries to act according to that pattern.
- Listen to the suggestion of others calmly and patiently.
- It encourages people to take on new and flexible tasks for their development and generate alternatives for solving problems or meeting objectives.
- It is characterized by its commitment, example and ability to lead, and think with revolutionary restlessness.

On the other hand, with the training sessions carried out from May to December 2021, a total of 4,051 competency profiles have been prepared. In the Livestock Business Group, including the cadres of the 88 companies in the country, 1,241 competency profiles have been completed. Also, there are some management positions that, due to their characteristics, are similar between one company and another, for which reason the position profile is the same, which occurs in 450 management positions in the country in this group.

III. Competency Evaluation

The evaluation of cadres by competencies requires compliance with the provisions of Decree Law 13/2020 "System of work with State and Government cadres and their Reserves", in its Articles 45.1, 46 and 4, of Presidential Decree 208/ 2021 "Regulation of the Work System with the State and Government Cadres and their Reserves" and the Methodology for the annual evaluation of the cadres of the Directorate of State and Government Cadres.

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As an example, the proposal for evaluating the tables by competencies for the Livestock Business Group is shown, to be applied in two moments (closing of the first semester and at the end of the year). The self-assessment of the competency profile and that established in the Annual Assessment Model for executives are included, with compliance being controlled by the immediate superior and by the Executive Body. (See **Table 5**).

Table 5. Relationship between the indicators of the annual evaluation and the competencies in the GECAN

Annual Assessment Indicators	Associated Competencies
1. Results of the work	<ul style="list-style-type: none"> • Prospective and strategic approach of management • Adaptability to change and proactivity • Orientation to the fulfillment of objectives and results • Innovation and creativity
2. Exemplary, demanding and authority before the group. Compliance with ethical principles and labor discipline. • Ethical values	<ul style="list-style-type: none"> • Ethical values • Technological discipline
3. Results in the application of what is established in the System of work with the cadres and reserves.	<ul style="list-style-type: none"> • Staff Trainer and ability to transfer knowledge • Planning and organization
4. Effectiveness in the Internal Control System	<ul style="list-style-type: none"> • Evaluation and control capacity • Management and management of resources
5. Compliance with informative discipline	<ul style="list-style-type: none"> • Comunicación
6. Work and management capacity	<ul style="list-style-type: none"> • Logical reasoning • Capacity for analysis and synthesis • Planning and organization • Leadership and command • Time management and delegation • Productive meetings • Team work • Problem solving and conflict management • Decision making • Integration capacity
7. Results you obtain in your preparation	<ul style="list-style-type: none"> • Knowledge of the activity to be performed • Knowledge of current legislation and regulations associated with their responsibility as a Manager. • Knowledge and technology management • Information and communication technologies (ICT)

Source: self made

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The self-assessment and evaluation model includes a rating for each competency on a scale between 1 and 4, which means: 4, very high (100%), 3, high (75%), 2, medium (50%) and 1, low (25%). Each of these evaluations must be substantiated taking into account the behavior of the team according to the possible performances described in the dictionary. As results of the evaluation, the indications to the evaluated staff, the preparation needs, the final result of the evaluation (very high, high, medium and low), as well as the projections of the staff (to maintain or not in the position and type of training) are shown. movement if applicable). Depending on the results of the evaluation by the head of the cadre of the competency profile, an action plan is established that is discussed in the cadre commission and with the subordinate.

Conclusions

The preparation of competency profiles in the agricultural sector in Cuba constitutes an organizational innovation due to the usefulness it represents in the work system with the cadres and their reserves, its relevance with the ability to generalize to other sectors, recommending the use of the proposed methodology that, through training and teamwork of the cadre bodies and the main management cadre, favors its implementation.

The more than 4,000 competency profiles prepared show that the applied methodology is pertinent, feasible and generalizable, raises the level of professionalization of the cadre bodies, promotes a better evaluation of the cadre and fulfillment of the projected promotional traffic.

The experience accumulated in eight months has made it possible to identify generic skills, tools have been developed to assess the importance of skills in relation to the vision, strategic objectives and needs of each load, which each organization can take as good practices, and the knowledge derived from the competency dictionaries and the competency assessment process generates learning and constitutes a key success factor in the implementation of the competency model for managers.

Bibliographic references

1. Chiavenato I. Administración de recursos humanos. El capital humano de las organizaciones. 8va. ed. México: McGraw-Hill; 2011.
2. Wong SC. Competency Definitions, Development and Assessment: A Brief Review. *International Journal of Academic Research in Progressive Education and Development*, 2020; 9 (3): 95-114.
3. Cuesta A. Gestión del talento humano y del conocimiento, Segunda edición, Bogotá: ECOE Ediciones; 2017.
4. Puchol L. Dirección y gestión de Recursos Humanos. 7ma edición. Madrid: Ediciones Díaz de Santos; 2007
5. Shet SV, S.V. Meena PR, Chandawarkar M. Competency based superior performance and organizational effectiveness, *International Journal of Productivity and Performance Management*; 2019 [Consulted 15 julio 2021] Available in: <https://doi.org/10.1108/IJPPM-03-2018-0128>
6. Parry SB. The quest for competencies. *Training*, 1996; 33 (7): 48-54. [Consulted 23 julio 2021] Available in: <https://eric.ed.gov/?id=EJ527012>.
7. Delgado M. Innovación Empresarial. En: Delgado M, Coordinador académico. *Temas de Gestión Empresarial*. Vol. II. La Habana: Editorial Universitaria Félix Varela; 2017. p. 117.

PROFILE OF COMPETENCES OF MANAGERS IN CUBA AND ITS APPLICATION IN AGRICULTURE

8. Cuesta A, Linares MA, Fleitas S, Delgado M. Gestión del Capital Humano. En: Delgado M, Coordinador académico. Temas de Gestión Empresarial. Volumen IV. La Habana: Editorial Universitaria Félix Varela. 2017; 157 p.
9. Champion MA, Fink AA, Ruggerberg BJ, Carr L, Phillips GM, Odman RB. Doing competencies well: best practices in competency modeling. *Personnel Psychology*. 2011; 64 (1): 225-262. <https://doi.org/10.1111/J.1744-6570.2010.01207.X>
10. Hoffmann T. The meanings of competency. *Journal of European Industrial Training*, 1999; 23 (6): 275–286.
11. Peña D, Delgado M. Procedimiento para la evaluación integrada del desempeño de una universidad de posgrado. *Revista Cubana de Administración Pública y Empresarial*. 2020; 4(1): 106-121 [Consulted 12 agosto 2021] Available in: <https://apye.esceg.cu/index.php/apye/article/view/105/209>
12. Ochoa, M Delgado. Procedimiento para la formación por roles en la producción de software en la universidad de ciencias informáticas. *Revista Cubana de Administración Pública y Empresarial*. 2017;1(2):121-134. [Consulted 12 agosto 2021] Available in: <https://apye.esceg.cu/index.php/apye/article/view/13>
13. Koehorst MM, van Deursen AAM, van Dijk JAGM, de Haan J. A Systematic Literature Review of Organizational Factors Influencing 21st-Century Skills. *SAGE Open* October-December 2021: 1–16. <http://doi.org/10.1177/21582440211067251>
14. Pham H, Kim SY. The effects of sustainable practices and managers' leadership competences on sustainability performance of construction firms. *Sustainable Production and Consumption*. 2019; 20: 1-14 [Consulted 23 junio 2021] Available in: <https://doi.org/10.1016/j.spc.2019.05.003>
15. Kirilina I. Leadership approach in small size enterprises during crisis time – A case study of two enterprises operating in Russia. [Master thesis International Business Management] Strömberg L (Instructor). Turku University of Applied Sciences; 2017. p. 66.
16. Eskindarov MA, Gruzina YuM, Firsova IA, Melnichuk MV. Human capital competencies in high-tech and knowledge-intensive sectors of the economy. *Economic and Social Changes: Facts, Trends, Forecast*, 2020;13(6): 199-214. [Consulted 23 junio 2021] Available in: <https://doi.org/10.15838/esc.2020.6.72.12>
17. Vasilieva EV. Developing the Creative Abilities and Competencies of Future Digital Professionals. *Automatic Documentation and Mathematical Linguistics*, 2018,52 (5):248–256. [Consulted 23 junio 2021] Available in: <https://doi.org/10.3103/S0005105518050060>
18. Sagi L. Gestión por competencias: el reto compartido del crecimiento personal y de la organización. Madrid: ESIC editorial; 2004.
19. Oficina Nacional de Normalización. NC 3000-3002:2007. Sistema de gestión integrada de capital humano–Vocabulario, Requisitos e Implementación. La Habana; 2007.
20. Cuesta A. Organización del trabajo: base de la gestión del capital humano. *Revista Cubana de Administración Pública y Empresarial*. 2017;1(2): 107-119 [Consulted 1 julio 2021] Available in: <https://apye.esceg.cu/index.php/apye/article/view/12>
21. International Standard Organization. ISO 10015: 2019. Gestión de la calidad — Directrices para la gestión de la competencia y el desarrollo de las personas. Segunda edición 2019-12. Traducción oficial, Ginebra, versión española; 2020.
22. Prahalad CK, Hamel G. The core competence of the corporation. *Harvard business Review*, 1990; 68 (3): 79-91. [Consulted 24 junio 2021] Available in: https://doi.org/10.1007/3-540-30763-X_14

PROFILE OF COMPETENCES OF MANAGERS IN CUBA AND ITS APPLICATION IN AGRICULTURE

23. Hecklau F, Galeitzke M, Flachs S, Kohl H. Holistic approach for human resource management in Industry 4.0. *Procedia CIRP* 54. 6th CLF - 6th CIRP Conference on Learning Factories. 2016: 1-6. [Consulted 24 junio 2021] Available in: <https://doi.org/10.1016/j.procir.2016.05.102>
24. Matt DT, Modrák V, Zsifkovits H (Editors). *Industry 4.0 for SMEs Challenges, Opportunities and Requirements*. Springer Nature Switzerland AG, Palgrave Macmillan; 2020. [Consulted 24 junio 2021] Available in: <https://doi.org/10.1007/978-3-030-25425-4>
25. Simic M, Nedelko Z. Development of competence model for industry 4.0: a theoretical approach. 37th International Scientific Conference on Economic and Social Development – "Socio Economic Problems of Sustainable Development". In: Ibrahimov M, Aleksic A, Darko D (Editors). *Economic and Social Development. Book of Proceedings*. Baku, 14-15 February, 1289-1299; 2019.
26. Flores E, Xu X, Lu Y. Human Capital 4.0: a workforce competence typology for Industry 4.0. *Journal of Manufacturing Technology Management*. 2020; 31 (4): 687-703. [Consulted 3 septiembre 2021] Available in: <https://doi.org/10.1108/JMTM-08-2019-0309>
27. Cuesta A, Lopes I. Hacia las competencias profesionales 4.0 en la empresa cubana. *Revista Cubana de Ingeniería*. 2020; XI (1): 66-76. [Consulted 3 septiembre 2021] Available in: <https://rci.cujae.edu.cu/index.php/rci/article/view/738/446>
28. Delgado M, Infante MB, Abreu Y, Infante O, Díaz JA, Martínez J. Vigilancia tecnológica en una Universidad de Ciencias Técnicas. *Ingeniería Industrial*. 2011;32(1):9. [Consulted 28 julio 2021] Available in: <https://rii.cujae.edu.cu/index.php/revistaind/article/view/325>.
29. Delgado M, Arrebato L. Diagnóstico integrado de la vigilancia tecnológica en organizaciones. *Ingeniería Industrial*. 2011; XXXII (2): 151-156. [Consulted 28 julio 2021] Disponible en: <http://www.redalyc.org/pdf/3604/360433576009.pdf>.
30. Dmitrichenkova SV., Stanchuliak TG, Budiltseva MB, Berezhnyakovskiy VS, Orlova IK, Filippova OA, Moiseeva OA. Training the Modern Manager in the Context of the Competence Approach. *Propósitos y Representaciones*. Agosto de 2020; 8, SPE (2), e632. [Consulted 2 septiembre 2021] Available in: <http://doi.org/10.20511/pyr2020.v8nSPE2.632>
31. Kruyen PM, Van Genugten M. Opening up the black box of civil servants' competencies, *Public Management Review*; 2019 [Consulted 20 julio 2021] Available in: <https://doi.org/10.1080/14719037.2019.1638442>
32. Bird B. Seminal Ideas for the Next Twenty-Five Years of Advances in Entrepreneurship, Firm Emergence and Growth, In: 1995, JAI Press Inc. This chapter was originally published in *Advances in Entrepreneurship, Firm Emergence and Growth, Volume 2*: 51–72. 2019; 21: 115–131. [Consulted 28 julio 2021] Available in: <https://doi.org/10.1108/S1074-754020190000021011>
33. Lumineau F. How Contracts Influence Trust and Distrust. *Journal of Management*. 2017;43(5): 1553-1577. [Consulted 5 julio 2021] Available in: <https://doi.org/10.1177/0149206314556656>.
34. Kreye M., Roehrich JK, Lewis MA. Servitizing Manufacturers: The Importance of Service Complexity and Contractual and Relational Capabilities. *Production Planning and Control* 2015; 26:1233–1246. [Consulted 20 julio 2021] Available in: <https://doi.org/10.1080/09537287.2015.1033489>.
35. Roehrich JK., Selviaridis K, Kalra J, Van der Valk W, Fang F. Inter-organizational governance: a review, conceptualisation and extension, *Production Planning & Control*; 2019 [Consulted 20 julio 2021] Available in: <https://doi.org/10.1080/09537287.2019.1647364>
36. Shao J. The moderating effect of program context on the relationship between program managers' leadership competences and program success. *International Journal of Project Management*. 2018;

PROFILE OF COMPETENCES OF MANAGERS IN CUBA AND ITS APPLICATION IN AGRICULTURE

- 36 (1): 108-120 [Consulted 5 septiembre 2021] Available in: <http://doi.org/10.1016/j.ijproman.2017.05.004>
37. Tien NH, Minh TT. Leadership, power and influence in state-owned enterprises in Vietnam. *International Journal of Commerce and Management Research*. 2019; (5): 5; 71-74.
38. Frost D, Wallingford V. Experiential learning for developing managers: a practical model. *Journal of Management Development*, 2013; 32 (7): 756-767[Consulted 2 septiembre 2021] Available in: <https://ur.booksc.eu/book/52497083/2e41b0>.
39. Delgado M. Proyectos de innovación en Administración Pública y Empresarial en Cuba. *Folletos Gerenciales*, abril-junio, 2018; Volumen XXII (2): 71-84. [Consulted 4 mayo 2021] Available in: <http://folletosg.mes.gob.cu/index.php/folletosgerenciales/article/download/89/104>.
40. Delgado M. Enfoque y métodos para la innovación en la Administración Pública y Empresarial. *Revista Cubana de Administración Pública y Empresarial*. 2019; 3(2):141-153 [Consulted 29 agosto 2021] Available in: <https://apye.esceg.cu/index.php/apye/article/view/79/88>
41. Delgado M. Gestión orientada a la innovación en la preparación de los cuadros empresariales Retos de la Dirección 2019; 13(2): 59-80. [Consulted 4 mayo 2021] Available in: http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S2306-91552019000200059.
42. Díaz-Canel M, Delgado M. Modelo de gestión del gobierno orientado a la innovación. *Revista Cubana de Administración Pública y Empresarial*. septiembre-diciembre 2020; 4(3): 300-321. [Consulted 5 enero 2021] Available in: <https://apye.esceg.cu/index.php/apye/article/view/141>
43. Díaz-Canel M, Delgado M. Mapa estratégico del Cuadro de Mando Integral del modelo de gestión del gobierno orientado a la innovación para la COVID-19. *Revista Cubana de Administración Pública y Empresarial*, 2021;5(2), e164. [Consulted 4 septiembre 2021] Available in: <https://doi.org/10.5281/zenodo.5453120>
44. Chen T. The key to improve china's civil servant competence: civil servant training. [Thesis Master of public policy] Supervisor: Jin Park, KDI School of Public Policy and Management, Corea del Sur, July; 2010.
45. Decreto-Ley 13/2020 "Sistema de Trabajo con los cuadros del Estado y del Gobierno y sus reservas" (GOC-2021-279-O30). *Gaceta Oficial No. 30 Ordinaria de 19 de marzo de 2021*. [Consulted 20 mayo 2021] Available in: <https://www.gacetaoficial.gob.cu/es/decreto-ley-13-de-2020-de-consejo-de-estado>
46. Decreto Presidencial 208/2021 "Reglamento del Sistema de Trabajo con los cuadros del Estado y del Gobierno y sus reservas" (GOC-2021-280-O30). *Gaceta Oficial No. 30 Ordinaria de 19 de marzo de 2021*. [Consulted 20 mayo 2021] Available in: <https://www.gacetaoficial.gob.cu/es/decreto-presidencial-208-de-2021-de-presidente-de-la-republica>
47. PCC. Ideas Conceptos y Directrices. VIII Congreso. Partido Comunista de Cuba (PCC). La Habana, Abril; 2021. p. 37.
48. PCC. Conceptualización del modelo económico y social cubano de desarrollo socialista. Lineamientos de la política económica y social del Partido y la Revolución para el período 2021-2026. VIII Congreso. Partido Comunista de Cuba (PCC). La Habana, Abril; 2021. p. 86.
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Conflict of interests

The authors declare no conflicts of interest

Authors contribution

- Mercedes Delgado Fernández: Conceptualization, formal analysis, coordination, methodology design, data processing, writing, review and editing.
- Julia Muriel Escobar: Data collection, writing and review.
- Jesús Camilo Polo Vázquez: Data collection, writing and review.
- Danay Padilla Rodríguez: Data collection, writing and review.